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EXAMINER	
SHIN, KYUNG H	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/965,430	KRISHNAN ET AL.	
	Examiner	Art Unit	
	Kyung H. Shin	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-92* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is responding to application filed 9/27/2001.

2. Claims **1 - 92** are pending. Claims **1, 4, 32, 35, 63, 66** have been amended. Independent claims are **1, 32, 63**.

Response to Arguments

3. Applicant's arguments filed 9/16/2005 have been fully considered but they are not persuasive.

Response to Remarks

3.1 Applicant argues that the referenced prior art does not disclose *" ... network nodes as software objects which send and receive messages to and from other objects ... " (see Remarks Page 40, Lines 6-7)*

The Wallach (6,292,905) prior art discloses network objects which are nodes utilizing network communications over an internetworking environment. (see Wallach col. 4, lines 1-4: network (i.e. LAN) connections for communications (i.e. send and receive messages) between nodes within a distributed network environment)

3.2 Applicant argues that the referenced prior art does not disclose *" ... establishing a DDB in each of its nodes ... " (see Remarks Page 39, Line 23)*

The Wallach (6,292,905) prior art discloses the establishment of a DDB

(i.e. distributed database) utilized within a collection of network connected nodes. The Wallach (6,292,905) prior art discloses a distributed system consisting of a plurality of server systems and a plurality of network resources connected to server systems creating a set of server controlled network resources such as printer or storage servers. In addition, a set of server systems consisting of a plurality of systems designated as primary and secondary servers. And, another set consisting of a plurality of server type systems which are neither primary nor secondary servers and are not part of the failure and recovery process. Each network node contains a DDB within its server system. (see Wallach col. 4, lines 25-27: distributed database within each server ; col. 10, lines 40-45; col. 10, lines 51-54: primary and secondary servers for network resource, network resource without primary and secondary servers ; col. 4, lines 1-4: network connections for communications)

3.3 Applicant argues that the referenced prior art does not disclose *" ... a DDB established in its servers ... but not in its printers ... nor in its RAID storage devices ... " (see Remarks Page 40, Lines 2-3) ; " ... printer and storage devices (nodes) participating in a network ... would each have a DDB included therein, but Wallach's printers and storage devices do not ... " (see Remarks Page 40, Lines 10-12)*

The Wallach (6,292,905) prior art discloses network resources such as a printing or a storage resource, which is attached to a server system (i.e.

containing a distributed database). A printer subsystem is attached to a server system creating a printer server system. A storage subsystem is attached to a server system creating a storage (i.e. file) server system. With this type of configuration, the print server and storage server is analogous art to the Applicant's definition of a network node. The print server and storage server communicates (i.e. sends and receives messages) with other objects in the network environment. A distributed database (i.e. DDB) is established within each server or network node (i.e. server services, printing, storage). (see Wallach col. 4, lines 13-15; col. 4, lines 19-24: printer and storage connected to server system ; col. 4, lines 1-4: network connections)

3.4 Applicant argues that the referenced prior art does not disclose *" ... means for controlling contents of each said DDB to be identical to contents of every other said DDB and in a manner to avoid a single point of failure ... " (see Remarks Page 40, Lines 19-21)*

The Wallach (6,292,905) prior art discloses the capability to duplicate the contents of a distributed database across a set of additional databases utilizing the replication process. By definition, within a database management system replication is the ability to keep distributed databases synchronized by routinely copying the entire database to other database servers within the network environment.

(1.http://www.answers.com/replication&r=67)

The Wallach (6,292,905) prior art discloses the capability to perform replication of the contents of a distributed database. (see Wallach col. 3, lines 40-45; col. 4, lines 25-27; col. 5, lines 32-34: replication, capability to duplicate contents of a distributed database)

The Wallach (6,292,905) prior art discloses a plurality of primary and secondary server system for a network resource. There is not a single primary and secondary server pair for the entire network connected distributed database (i.e. DDB). The DDB designates a plurality of network resources managed by the distributed database management system with a plurality of primary and secondary server pairs. A server pair for the management of each network resource. There is no single point of failure for the database management system due to the plurality of network resources and the plurality of primary and secondary server pairs. (see Wallach col. 3, lines 40-43: plurality of network resources ; col. 10, lines 40-45: primary and secondary servers for each network resource)

3.5 Applicant argues that the referenced prior art does not disclose *" ... One cannot backup a server with a printer. One cannot backup a server with a storage device ... " (see Remarks Page 43, Lines 10-11)*

The Wallach (6,292,905) prior art discloses that the backup (i.e. failure recovery) capability is for the server system controlling a printer or a storage system. (see Wallach col. 4, lines 13-15; col. 4, lines 19-24: resource (i.e. print, storage capability) with attach server system)

3.6 There is a DDB within each network connected node (i.e. including printer and storage server attached systems). There is not a single point of failure (i.e. due to multiple primary and secondary server pairs). Each DDB is a duplicate copy (i.e. utilizing the replication process) of the other DDBs within the network environment.

Claim Rejection - 35 USC § 102

The text of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1, 3, 32, 34, 63, 65** are rejected under 35 U.S.C. 102(e) as being anticipated by **Wallach et al.** (US Patent No. 6,292,905).

Regarding Claims 1, 32, 63, Wallach discloses in a computer network having a plurality of nodes for interacting with computer network information, a system, computer program product, method for managing said plurality of nodes comprising:

a) means for establishing a DDB in each of said nodes; (see Wallach col. 5, lines 21-23; col. 5, lines 32-34: distributed directory database for each network node) and

b) means for controlling contents of each said DDB to be identical to contents of every other said DDB and in a manner to avoid a single point of failure. (see Wallach col. 4, lines 25-27; col. 3, lines 40-45; col. 6, lines 21-24: information on each network node replicated (i.e. identical copy), avoid single point of failure)

Regarding Claims 3, 34, 65, Wallach discloses the system of claim 1 and wherein said interacting includes receiving, storing, modifying, and transmitting. (see Wallach col. 9, lines 44-54; col. 10, lines 21-22: interface capabilities to manipulate (storing, modifying) distributed directory database information; col. 5, lines 32-34: replicating (i.e. receiving, transmitting) database information)

Claim Rejection - 35 USC § 103

5. **Claims 2, 4, 5, 6, 9, 33, 35, 36, 37, 40, 64, 66, 67, 68, 71** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wallach** in view of **Taylor** (US Patent No. 5,664,170).

Regarding Claims 2, 33, 64, the system of claim 1 and wherein:

Wallach discloses said computer network information comprises both computer data and domain configuration status and a unique identifier affiliation for network node. (see Wallach col. 5, lines 21-23: distributed database of network resource information; col. 5, lines 59-63: unique identifier for network node). Wallach does not specifically disclose an IP addressing scheme. However, Taylor discloses:

a) said each of said nodes has a unique IP address; (see Taylor col. 4, lines 29-33; col. 10, lines 48-52; col. 13, lines 17-20: IP addressing scheme for network communications) and,

said DDB establishing means further comprises:

i) means for associating each said unique IP address with its respective node to provide an IP-address-respective-node association; a network IP association (see Taylor col. 4, lines 29-33; col. 10, lines 48-52; col. 13, lines 17-20: IP addressing scheme for network communications and an association between address and network node)

ii) means for distributing said network IP association to said DDB in each of said nodes; (see Wallace col. 4, lines 25-27; col. 5, lines 32-34: database information replicated (i.e. identical copies) to network nodes) and,

said contents controlling means further comprises:

a) means for maintaining the most current of said domain configuration status in said DDB in each of said nodes. (see Wallace col. 4, lines 25-27; col. 5, lines 32-34: database information replicated (i.e. identical copies) to network nodes)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable unique IP addressing scheme for network communications as taught by Taylor. One of ordinary skill in the art would be motivated to employ Zondervan in order to enable an efficient and flexible reorganization of the network structure within a network environment. (see Taylor col. 2, lines 18-20: "*... provide a network system that permits flexible reorganization of the network structure ...* ")

Regarding Claims 4, 35, 66, Wallach discloses the system of claim 2 and wherein said controlling means further comprises:

a) means for selecting one of said plurality of nodes as a master node; (see Wallach col. 3, lines 46-50: designation primary server (i.e. master node) and secondary server)

b) means for subordinating all other of said plurality of nodes to said master node in a configuration defined by said master node and said all other of said plurality of nodes; (see Wallach col. 3, lines 46-50: primary (i.e. master) server main interface to distributed directory database information) and,

c) said master node including means for responding to a change to said domain configuration status in a manner to maintain said contents of each said DDB identical to said contents of every other DDB. (see Wallach col. 3, lines 50-54: database information updated to reflect selection of new primary (i.e. master) server (i.e. node))

Regarding Claims 5, 36, 67, Wallach discloses the system of claim 4 and wherein said controlling means further comprises: means for replacing said master node with another node if said master node fails. (see Wallach col. 3, lines 50-54: primary server (i.e. master node) fails, backup server elevated to primary, database information updated to reflect node failure or modifications)

Regarding Claims 6, 37, 68, Wallach discloses the system of claim 5 and wherein said master node replacing means includes means for replacing said master node with another node selected from said configuration. (see Wallach col. 3, lines 50-54: primary server (i.e. master node) fails, backup server elevated to primary, database information

updated to reflect network node failure and replacement)

Regarding Claims 9, 40, 71, Wallach discloses the system of claim 5 and wherein said computer network is a client-server network having a graphical user interface and wherein said replacing means further comprises: means, utilizing said graphical user interface, for invoking a select master dialog by which said user can select said another node. (see Wallach col. 9, lines 44-54: interface for manipulation (i.e. selection of node) of database information)

6. **Claims 7, 8, 10, 13 - 16, 19 - 22, 25 - 27, 38, 39, 41, 44 - 47, 50 - 60, 69, 70, 72, 75 - 78, 81 - 91** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wallach-Taylor** and further in view of **Bunnell** (US Patent No. 6,192,405).

Regarding Claims 7, 38, 69, Wallach discloses the system of claim 4 and wherein said change to said domain configuration status is selected from the group of changes consisting of:

b) a third node failing in said configuration; and, a network link failing between a fourth node in said configuration and said master node. (see Wallach col. 6, lines 13-18: detection of network resource (i.e. third, fourth nodes) failure, information updated to reflect failure)

Wallach does not specifically disclose the addition of network resources within a distributed directory database. However, Bunnell discloses:

a) adding a first node to said configuration; deleting a second node from said configuration; (see Bunnell col. 3, lines 47-49; col. 4, lines 27-30; col. 7, lines 31-39: distributed directory database, add network resource (i.e. network node))

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable capability for addition of a network resource (i.e. network node) as taught by Bunnell. One of ordinary skill in the art would be motivated to employ Bunnell in order to optimize and centralize management of network resources within a network environment. (see Bunnell col. 1, lines 53-58: "*... improved method and apparatus for managing access to resources in a computer system ... method and apparatus for centralized access control to resources through a management service ...* ")

Regarding Claims 8, 39, 70, Wallach discloses the system of claim 7 and wherein said computer network is a client-server (see Wallach col. 2, lines 59-61: client-server) network having a graphical user interface and wherein said selecting means further comprises: means, utilizing said graphical user interface, for invoking a select master dialog by which said user can select said one of said plurality of nodes. (see Wallach col. 9, lines 44-54: interface for manipulation of database information)

Regarding Claims 10, 41, 72, Wallach discloses the system of claim 7 and wherein said responding means further comprises:

a) first means for handling said third node failing under conditions in which said master node is known to said third node; (see Wallach col. 6, lines 13-18; col. 6,

lines 21-24: database updated to reflect failure of network resource (i.e. network node, third node)) and,

b) second means for handling said third node failing under conditions in which said master node is unknown to said third node. (see Wallach col. 6, lines 13-18; col. 6, lines 21-24: database updated to reflect failure of network resource (i.e. network node, third node))

Regarding Claims 13, 44, 75, Wallach discloses the system of claim 10 and wherein said conditions in which said master node is unknown to said third node include both said third node failing while it is being added to said configuration and said master node was replaced during time of failure of said third node. (see Wallach col. 3, lines 40-45; col. 3, lines 50-54; col. 6, line 13-18: primary server (i.e. master node) replaced due to node failure, capability to update database in the event of network resource failure)

Regarding Claims 14, 45, 76, Wallach discloses the system of claim 13 and wherein said second means further comprises:

a) means, employed by said master node, for repetitively pinging said third node at predetermined intervals until said third node recovers and sends a recovery signal to said master node; (see Wallach col. 2, lines 20-26; col. 6, lines 21-24; col. 6, lines 30-33: communication link (i.e. handshake, poll), update database to reflect recover of network resource (i.e. network node)) and,

b) said master node including means, responsive to said recovery signal, for updating the DDB in said third node as may be needed. (see Wallach col. 6, lines

30-33: update distributed directory database to reflect recover of network resource (i.e. network node))

Regarding Claims 15, 46, 77, Wallach discloses the system of claim 14 and wherein said third node DDB updating means includes means for handshaking between said master node and said third node. (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detecting network resource (i.e. server, object) failure)

Regarding Claims 16, 47, 78, Wallach discloses the system of claim 7 and wherein said responding means further comprises: means for handling said network link failing. (see Wallach col. 6, lines 13-18: process network resource (i.e. network node, communications link) failure)

Regarding Claims 19, 50, 81, Wallach does not disclose addition of network resources in a distributed directory database. However, Bunnell discloses the system of claim 7 and wherein said responding means further comprises: means for handling said adding a first node to said configuration. (see Bunnell col. 3, lines 47-49; col. 4, lines 27-30; col. 7, lines 31-39: distributed directory database, addition of network resource (i.e. network node))

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable capability for addition of network resources (i.e. network nodes) as taught by Bunnell. One of ordinary skill in the art

would be motivated to employ Bunnell in order to optimize and centralize management of network resources in a network environment. (see Bunnell col. 1, lines 53-58)

Regarding Claims 20, 51, 82, Bunnell discloses the system of claim 19 and wherein said first node adding handling means comprises: means for determining if said first node is being added through said master node to obtain a master-added node or through one of said all other of said plurality of nodes to obtain a portal-added node. (see Bunnell col. 3, lines 47-49; col. 4, lines 27-30; col. 7, lines 31-39: distributed directory database, addition of network resources (i.e. server or portal network node))

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable capability for addition of network resource (i.e. network node) as taught by Bunnell. One of ordinary skill in the art would be motivated to employ Bunnell in order to optimize and centralize management of network resources in a network environment. (see Bunnell col. 1, lines 53-58)

Regarding Claims 21, 52, 83, Wallach discloses the system of claim 20 and wherein said determining means, for the condition of said master-added node, further comprises:

a) said master node including means for updating the DDB in said master node with the IP address of said first node and for informing said first node that the first node's master is said master node; (see Wallach col. 9, lines 44-54: interface for manipulation of database information (i.e. set master node))

b) said first node including means, responsive to operation of said informing means, for entering the IP address of said master node in the DDB of said first node and for acknowledging said master node; (see Wallach col. 5, lines 59-63; col. 6, lines 42-46; col. 9, lines 44-47: unique identifier (i.e. IP address) for network node, interface for manipulation of database information) and,

c) said master node including means for sending said IP address of said first node as an update to all other nodes in said configuration. (see col. 4, lines 25-27; col. 5, lines 32-34: replication, update information transmitted to network nodes)

Regarding Claims 22, 53, 84, Wallach discloses the system of claim 21 and wherein said IP address sending means further comprises: means for performing a master to node handshake between said master node and said all other nodes in said configuration. (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect network resource (i.e. server, object) failure)

Regarding Claims 25, 56, 87, Bunnell discloses the system of claim 8 and wherein said responding means further comprises: means for handling said deleting a second node from said plurality of nodes. (see Bunnell col. 3, lines 47-49; col. 4, lines 27-30; col. 7, lines 31-39: distributed directory database, add delete network resources (i.e. network node))

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable capability for deletion of network

resource (i.e. network node) as taught by Bunnell. One of ordinary skill in the art would be motivated to employ Bunnell in order to optimize and centralize management of network resources in a network environment. (see Bunnell col. 1, lines 53-58)

Regarding Claims 26, 57, 88, Wallach discloses the system of claim 25 further comprises:

(1) updating the DDB in said master node by removing the IP address of said second node from the DDB of said master node; (see Wallach col. 9, lines 44-54: interface for manipulation of database information)

(2) informing said second node that said configuration no longer includes said second node and detaching said second node from said configuration; erasing all contents of the DDB of said second node; and, sending an update to all remaining nodes in said configuration. (see Williams col. 4, lines 25-27; col. 5, lines 32-34: replication of database information to network nodes)

Wallach discloses means for utilizing said graphical user interface and means for determining if said second node is removed through said master node. (see Wallach col. 9, lines 44-54: interface for manipulation of database information) Wallach does not specifically disclose capability to delete (i.e. remove) network node. However, Bunnell discloses wherein said second node deleting handling means further comprises: means, responsive to operation of said determining means removing said second node through said master node, for:

a) means, for removing said second node from said configuration; means for determining if said second node is removed through said master node; (see Bunnell col. 3, lines 47-49; col. 4, lines 27-30; col. 7, lines 31-39: distributed directory database, add delete network resources (i.e. network node))

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable capability for deletion (i.e. removal) of network resources (i.e. network nodes) as taught by Bunnell. One of ordinary skill in the art would be motivated to employ Bunnell in order to optimize and centralize management of network resources in a network environment. (see Bunnell col. 1, lines 53-58)

Regarding Claims 27, 58, 89, Wallach discloses the system of claim 26 and wherein said update sending means further comprises: means for performing a master to node handshake between said master node and said all remaining nodes in said configuration. (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect network resource (i.e. server, object) failure)

Claim Rejection - 35 USC § 103

7. **Claims 11, 12, 17, 18, 23, 24, 28 - 31, 42, 43, 48, 49, 61, 62, 73, 74, 79, 80, 92** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wallach-Taylor-Bunnell** and further in view of **Zondervan et al.** (US Patent No. 6,516,327).

Regarding Claims 11, 42, 73, Wallach discloses means, employed by each of said all other of said plurality of nodes, for continuously polling said master node at regular intervals a handshake link to continuous poll at regular intervals (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect network resource (i.e. server, third node) failure) Wallach does not disclose the usage of version identification information. However, Zondervan discloses the system of claim 10 wherein said first means further comprises:

a) means for establishing version numbers to identify versions of said DDB in each of said plurality of nodes; (see Zondervan col. 5, lines 36-39; col. 3, lines 9-12: distributed database, version identification information)

b) obtain the most current one of said version numbers of the DDB in said master node; (see Zondervan col. 14, lines 28-36: obtain most current version identification information)

c) sending said most current one of said version numbers to said third node; (see Zondervan col. 14, lines 28-36: obtain most current version identification information) and

d) updating the DDB in said third node if said most current one of said version numbers does not match the version number of said DDB in said third node. (see Zondervan col. 14, lines 36-39; col. 14, lines 59-61: version identification information comparison and update)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable the capability to utilize version identification information in the processing of distributed databases as taught by Zondervan. One of ordinary skill in the art would be motivated to employ Zondervan in order to optimize and ensure accurate updates to distributed networked databases based on version identification information. (see Zondervan col. 2, lines 57-62)

Regarding Claims 12, 43, 74, Wallach discloses the system of claim 11 and wherein said third node DDB updating means includes means for handshaking between said master node and said third node. (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake mechanism) between systems or LAN communications (i.e. handshake mechanism) to detect network resource (i.e. server, third node) failure)

Regarding Claims 17, 48, 79, Wallach discloses means, employed by each of said all other of said plurality of nodes, for continuously polling said master node at regular intervals a handshake link to continuous poll at regular intervals (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect resource (i.e. server, fourth node failure) Wallach does not disclose the usage of version identification information. However, Zondervan discloses the system of claim 16 wherein said network link failing handling means further comprises:

a) means for establishing version numbers to identify versions of said DDB in each of said plurality of nodes; (see Zondervan col. 5, lines 36-39; col. 3, lines 9-12: distributed database, version identification information)

b) means to obtain the most current one of said version numbers of the DDB in said master node; (see Zondervan col. 14, lines 28-36: obtain most current version identification information)

c) means for sending said most current one of said version numbers to said fourth node; (see Zondervan col. 14, lines 28-36: obtain most current version identification information) and,

d) means for updating the DDB in said fourth node if said most current one of said version numbers does not match the version number of said DDB in said fourth node. (see Zondervan col. 14, lines 36-39; col. 14, lines 59-61: version identification information comparison and update)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable the capability to utilize version identification information processing distributed databases as taught by Zondervan. One of ordinary skill in the art would be motivated to employ Zondervan in order to optimize and ensure accurate updates to distributed networked databases based on version identification information. (see Zondervan col. 2, lines 57-62)

Regarding Claims 18, 49, 80, Wallach discloses the system of claim 17 and wherein said fourth node DDB updating means includes means for handshaking between said

master node and said fourth node. (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect network resource (i.e. server, fourth node) failure)

Regarding Claims 23, 54, 85, Wallach discloses the system of claim 20 and wherein said determining means, for the condition of said portal-added node, further comprises:

b) means for performing a node to master handshake between said first node and said master node; (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect resource (i.e. server, object) failure)

c) said portal node including means for informing said master node of the IP address of said first node; (see Wallach col. 4, lines 25-27; col. 5, lines 32-34: replication of database information to network nodes)

d) said master node including means for updating the DDB in said master node with the IP address of said first node and for informing said first node that the first node's master is said master node; (see Wallach col. 9, lines 44-47: interface for update and manipulation of database information)

e) said first node including means, responsive to operation of said informing means, for entering the IP address of said master node in the DDB of said first node and for acknowledging said master node; (see Wallach col. 9, lines 44-54: interface for update and manipulation of database information) and,

f) said master node including means for sending said IP address of said first node as an update to all other nodes in said configuration. (see Wallach col. 4, lines 25-27; col. 5, lines 32-34: database information replicated or updated to network nodes)

a) a cache memory included in said portal node; means for holding the IP address of said first node in said cache memory; (see Zondervan col. 4, lines 58-62: cache utilized as data storage mechanism)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable the capability to utilize cache data storage processing distributed databases as taught by Zondervan. One of ordinary skill in the art would be motivated to employ Zondervan in order to optimize and ensure accurate updates to distributed networked databases based on version identification information. (see Zondervan col. 2, lines 57-62)

Regarding Claims 24, 55, 86, Wallach discloses the system of claim 23 and wherein said IP address sending means further comprises: means for performing a master to node handshake between said master node and said all other nodes in said configuration. (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect network resource (i.e. server, network node) failure)

Regarding Claims 28, 59, 90, Wallach discloses the system of claim 25 and wherein said second node deleting handling means further comprises:

a) means, utilizing said graphical user interface, for removing said second node from said configuration; (see Wallach col. 9, lines 44-54: interface for manipulation of database information)

b) means for selecting a portal-removal node other than said master node through which to remove said second node from said configuration; (see Wallach col. 9, lines 44-54: interface for manipulation of database information)

e) means, responsive to operation of said determining means removing said second node through said portal-removal node and not through said master node, for:

(2) performing a node to master handshake between said portal-removal node and said master node; (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect resource (i.e. server, object) failure)

(3) informing said master node to remove the IP address of said second node from the DDB of said master node; see Wallach col. 4, lines 25-27; col. 5, lines 32-34: replication of database information to network nodes)

(4) updating the DDB in said master node by removing the IP address of said second node from the DDB of said master node; (see Wallach col. 4, lines 25-27; col. 5, lines 32-34: replication of database information to network nodes)

(5) informing said second node that said configuration no longer includes said second node and detaching said second node from said configuration; erasing all contents of the DDB of said second node; sending an update to all remaining nodes in said configuration (see Wallach col. 4, lines 25-27; col. 5, lines 32-34: replication of database information to network nodes)

Wallach does not disclose the capability to utilize a cache data storage mechanism and the capability to delete a network resource. However, Zondervan discloses:

c) a cache memory included in said portal-removal node; (see Zondervan col. 4, lines 58-62: cache utilized as data storage mechanism)

(1) storing the IP address of said second node in said cache; (see Zondervan col. 4, lines 58-62: cache utilized as data storage mechanism)

And, Bunnell discloses:

d) means for determining if said second node is removed through said master node; (see Bunnell col. 3, lines 47-49; col. 4, lines 27-30; col. 7, lines 31-39: distributed directory database, deletion (i.e. removal) of network resources (i.e. network node))

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable the capability to utilize version identification information processing distributed databases as taught by Zondervan, and to enable capability to add, delete network resources (i.e. network nodes) as taught by Bunnell. One of ordinary skill in the art would be

motivated to employ Zondervan in order to optimize and ensure accurate updates to distributed networked databases based on version identification information (see Zondervan col. 2, lines 57-62: "*... ensure that updates are made to the most up-to-date version of the database ... ensure accurate synchronization of data ...* "), and to employ Bunnell in order to optimize and centralize management of network resources in a network environment. (see Bunnell col. 1, lines 53-58)

Regarding Claims 29, 60, 91, Wallach discloses the system of claim 28 and wherein said update sending means further comprises: means for performing a master to node handshake between said master node and said all remaining nodes in said configuration. (see Wallach col. 2, lines 20-26; col. 6, lines 21-24: mirror server link (i.e. handshake) between systems or LAN communications (i.e. handshake) to detect network resource (i.e. server, network node) failure)

Regarding Claims 30, 31, 61, 62, 92, Wallach discloses the system of claim 22 or 24, claim 27 or 29 and wherein said master to node handshake performing means comprises for each one of said all other nodes in said configuration:

a) first deciding means for deciding if the IP address of said master node in said update matches the IP address of said master node contained in the DDB of said each one of said all other nodes in said configuration; (see col. 5, lines 59-63: primary server (i.e. master node) has unique identifier (i.e. IP address))

b) means, responsive to operation of said first deciding means deciding no match, for rejecting said update and logging said event; (see Zondervan col. 9, lines 49-54: interface for manipulation of database information (i.e. actions logged within database))

Wallach does not disclose the usage of version identification information processing database information. However, Zondervan discloses:

c) second deciding means, responsive to operation of said first deciding means deciding a match, for deciding if the version number of the DDB in said master node before said update matches the version number of said DDB of said each one of said all other nodes in said configuration before said update; (see Zondervan col. 14, lines 36-39; col. 14, lines 59-61: version identification information comparison and update)

d) means, responsive to operation of said second deciding means deciding no match, for accepting a completely updated DDB with updated version number from said master node; (see Zondervan col. 14, lines 36-39; col. 14, lines 59-61: version identification information comparison and update) and,

e) means, responsive to operation of said second deciding means deciding a match, for accepting only said update with said updated version number from said master node. (see Zondervan col. 14, lines 36-39; col. 14, lines 59-61: version identification information comparison and update)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wallach to enable the capability to utilize version

identification information processing distributed databases as taught by Zondervan. One of ordinary skill in the art would be motivated to employ Zondervan in order to optimize and ensure accurate updates to distributed networked databases based on version identification information. (see Zondervan col. 2, lines 57-62)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyung H. Shin whose telephone number is (571) 272-3920. The examiner can normally be reached on 9 am - 7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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December 14, 2005

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